

## PATENT SPECIFICATION



Application Date: March 3, 1937. No. 23956/37.

478,233

(Divided out of No. 471,588.)

Complete Specification Accepted: Jan. 14, 1938.

## COMPLETE SPECIFICATION

## Improvements in or relating to Spring Suspensions for Road Vehicles

I, LESLIE MARK BALLAMY, a British Subject, of 63, Old Town, Clapham, London, S.W.4, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to spring suspensions for road vehicles of the kind in which a spring for a road wheel acts thereon through the medium of an arm mounted for up and down movement about a pivot on the chassis and having the spring connected therewith at a point intermediately of the pivot and the connection of the wheel therewith. The invention has for an object to provide improvements in spring suspensions of this kind applicable particularly to cases where the wheels are sprung independently.

An arrangement of swinging half axles in vehicles specially intended for cross country running has already been proposed, in which for the purpose of substantially increasing the clearance above the ground level the swinging axles oscillating up and down in a vertical plane transverse to the direction of running of the vehicle are arranged above the wheel axis, a gear being provided in the case of the driving wheels between the external end of the axial shaft and the pertinent wheel in proximity to the central plane of the wheel.

According to the present invention, in a spring suspension of the kind defined, the arm of each of two opposite driven road wheels is pivotal about the outer end of a transverse shaft driven by the gear-box or equivalent of the vehicle and has co-extensive therewith a driving shaft operatively connected through bevel, worm and wheel, or equivalent, gearing at one end with said transverse shaft and at the other end with the hub of the corresponding road wheel.

It will be seen that by the use of the present invention, opposite driven wheels of a vehicle may be sprung independently to a greater extent than is possible where such wheels are united by a solid axle casing extending co-axially therebetween.

One form of the invention is illustrated

by the accompanying drawings, where, as shown, a tubular arm 41, pivoted at its forward end to the chassis (not shown) carrying a wheel 42 at its rear end and having a spring 43 connected therewith through the medium of a shackle 44 has journaled therein a drive shaft 45, driven through the medium of bevel wheels 46 from a transverse shaft 47 and connected to drive the wheel 42 through the medium of bevel wheels 48.

It will be understood that in general there will be two transverse shafts, such as that indicated at 47, extending from opposite sides of the usual differential.

The present invention may be used in conjunction with the non-rigid interconnection of two arms of a pair of opposite wheels according to the Complete Specification of Letters Patent No. 471,588 and may incorporate the arrangement for varying the point of attachment of the spring to the arm as described in the Complete Specification of co-pending Application No. 23955/37.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

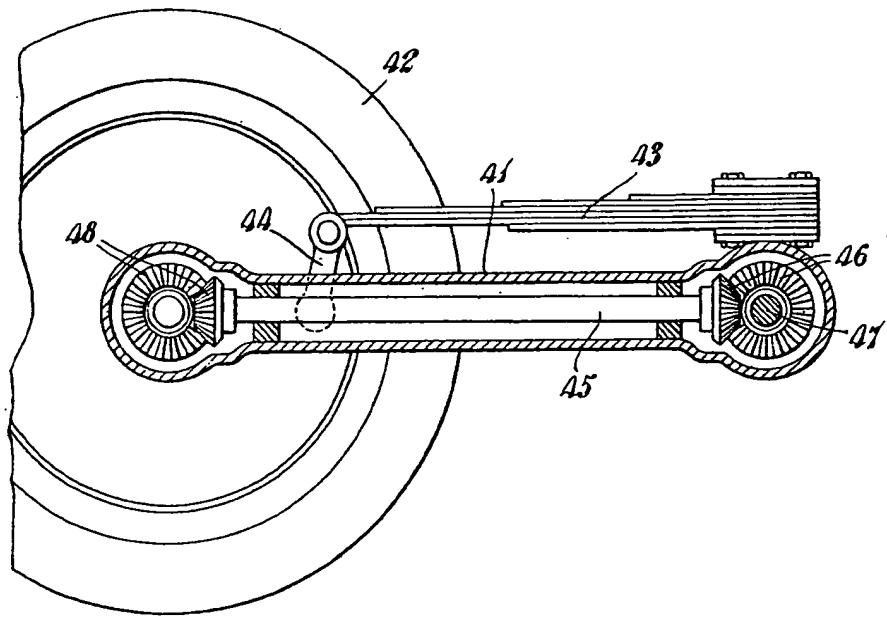
1. A spring suspension of the kind defined, in which the arm of each of two opposite driven road wheels is pivotal about the outer end of a transverse shaft driven by the gear-box or equivalent of the vehicle and has co-extensive therewith driving shafts operatively connected through bevel or worm and wheel, or equivalent, gearing at one end with said transverse shaft and at the other end with the hub of the corresponding road wheel.

2. A spring suspension system of the kind defined, having an arrangement of drive shafts and gearing substantially as hereinbefore described with reference to the accompanying drawing.

Dated this 26th August, 1937.

For the Applicant,  
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*[This Drawing is a reproduction of the Original on a reduced scale.]*



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